

Energy and Extreme Heat Forum

Climate Action Plan for Tempe 2050

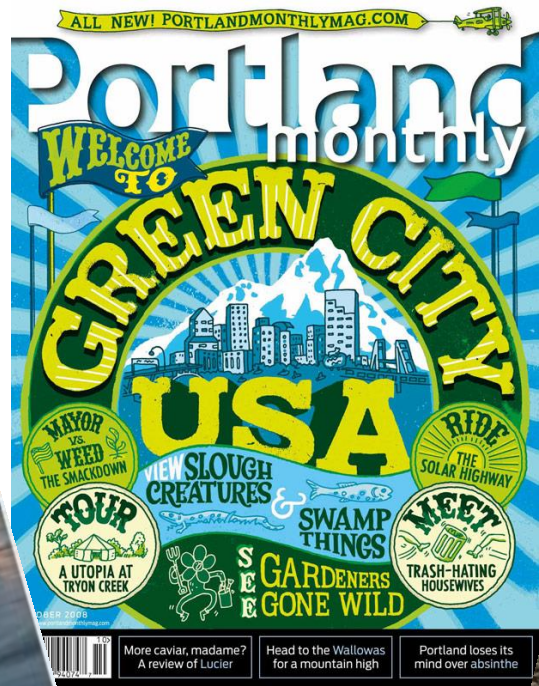
February 26, 2019





Local Climate Action:

Portland's plan for an equitable,
prosperous, healthy way forward



1970's Portland = 180 Air Quality Violations





REAL PROGRESS



REAL PROGRESS

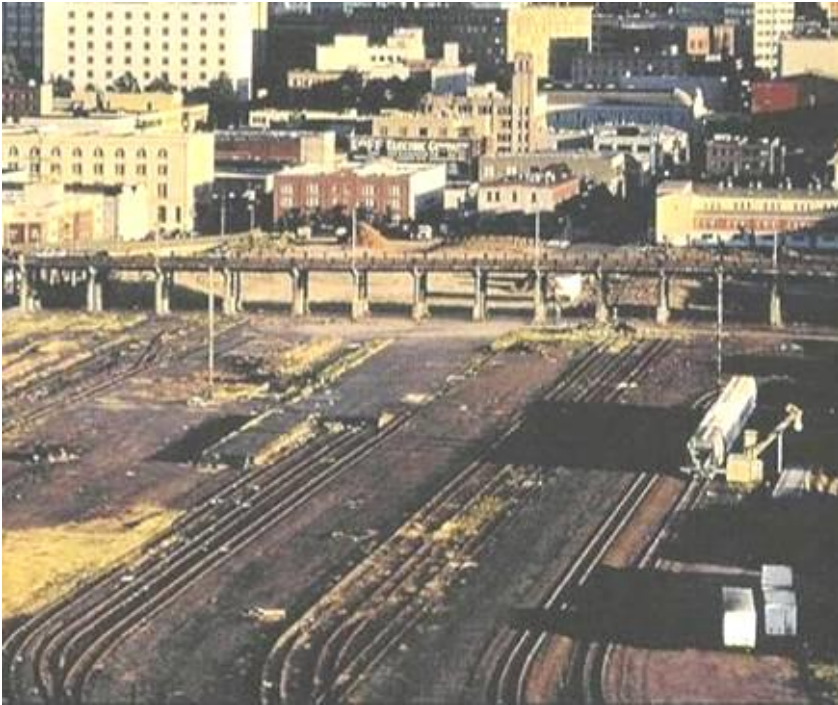


Harbor Drive



Waterfront Park

REAL PROGRESS



Pearl District



REAL PROGRESS



Mt. Hood Freeway “ghost ramp”



Transformation



Purpose of Forum

- What strategies could Tempe use to support energy efficiency and renewable energy?
- How can Tempe prepare for extreme heat in our city?
- What actions should we take to join the global movement on addressing climate?
- What goals should we set to reduce our community greenhouse gas emissions?

Climate Action Plan



Phase 1



Phase 2



Phase 3



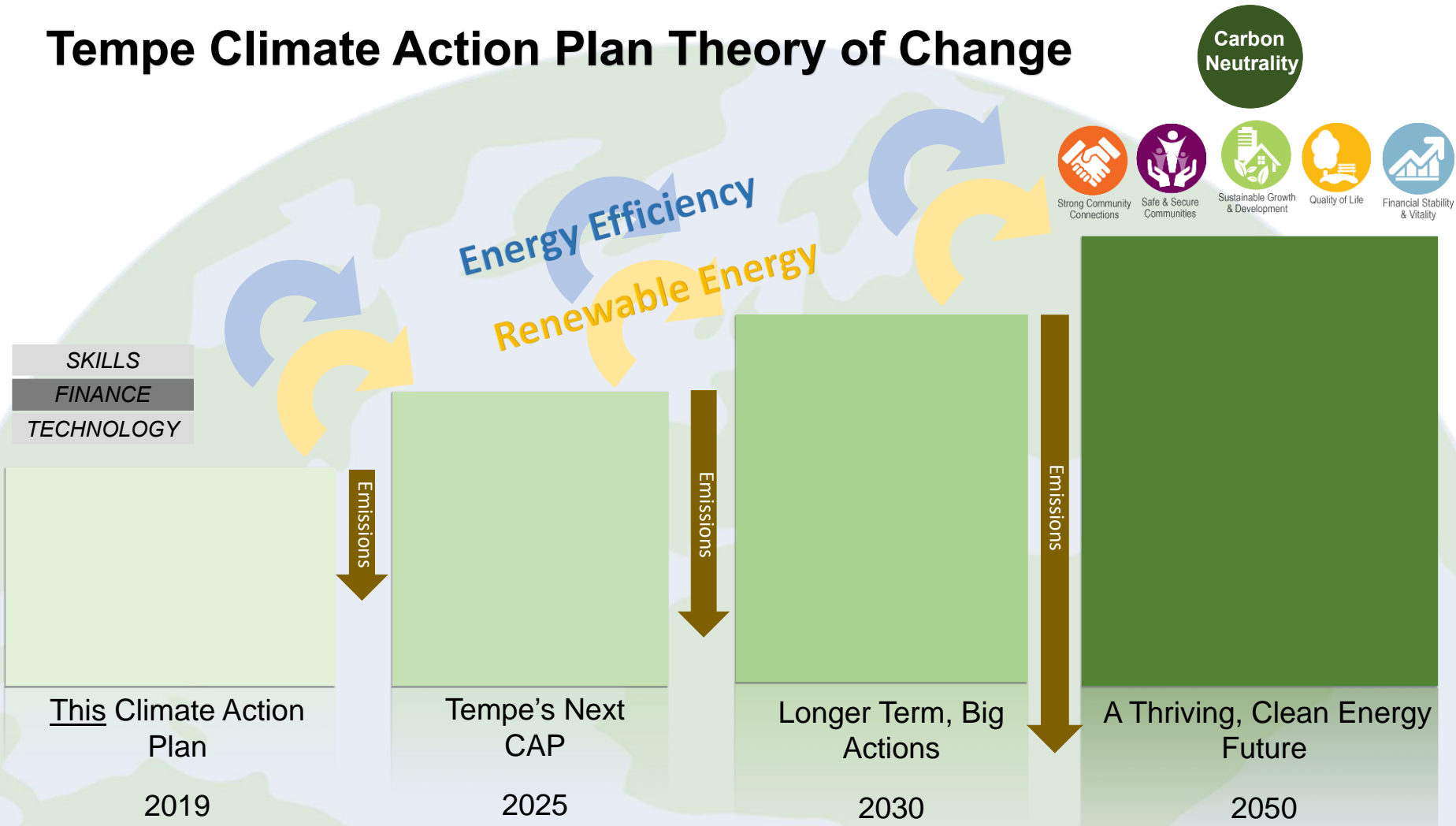
Phase 4

As part of the City's Commitment with the Global Covenant of Mayors:

1. Letter of Intent from Mayor and Council
2. Complete a greenhouse gas emissions inventory
3. Will set a target to reduce GHG emissions
4. Develop Climate Action Plan on how Tempe will reduce GHG emissions



Tempe Climate Action Plan Theory of Change



Greenhouse Gas Inventory

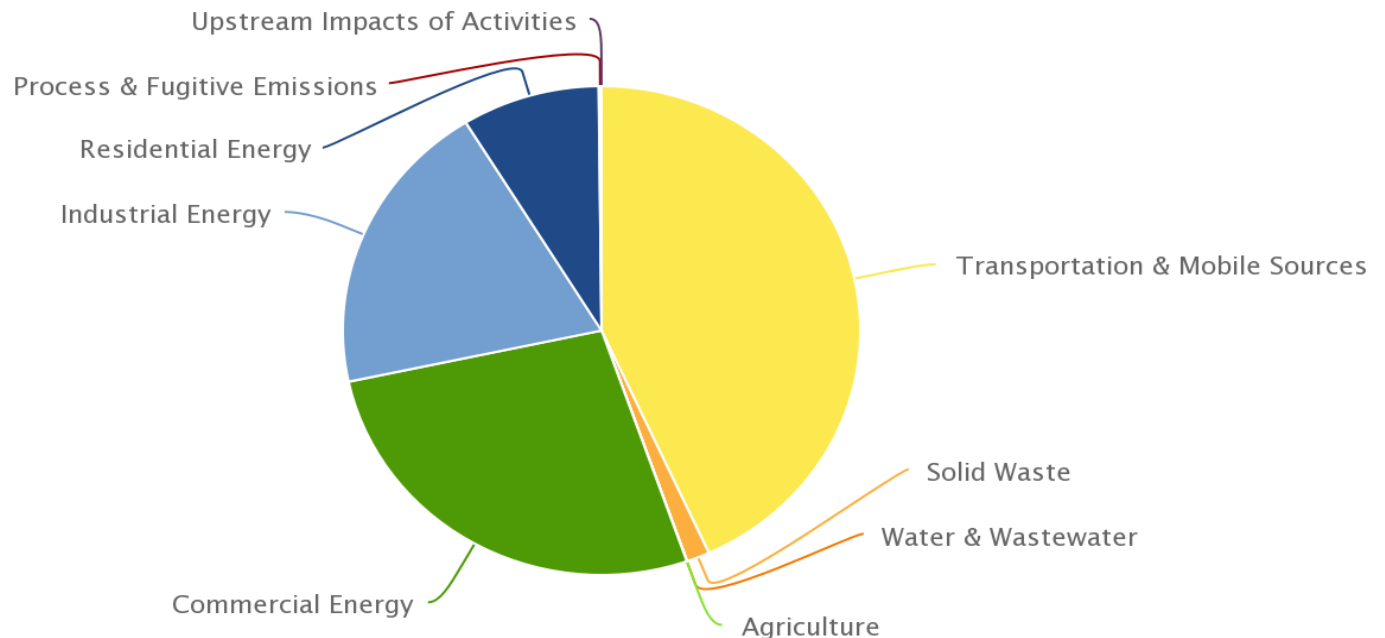
- If you can't measure it you can't manage it
- Sets a baseline to set reduction targets
- Identifies major sources of emissions
- Measures effectiveness of programs over time



Greenhouse Gas Inventory

Total Emissions:
3,667,560 MT CO₂e

CO₂e across all categories for current inventory



Municipal Energy Investments

Energy Efficiency improvements in city facilities include:

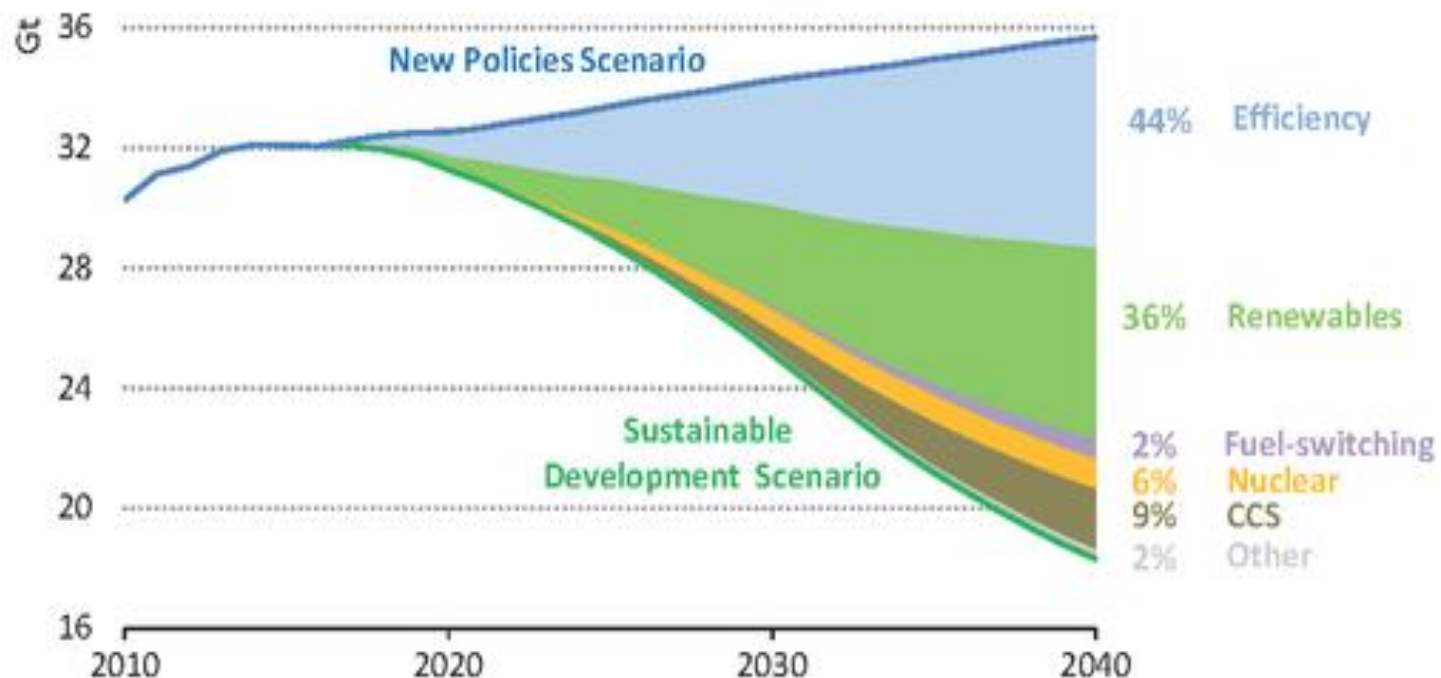
- Efficiency
 - Water treatment
 - Street lights
 - Buildings
 - HVAC
 - Lighting
 - Controls
 - Energy Management System
- Renewable Energy
 - Solar Panels installed at 6 city facilities
 - Alternative fuels



What Does a “Climate Action Plan” look like in Tempe?

- New **goal** for carbon reduction
- New **goal** for resilience to extreme heat
- Menu of **potential investments** (Including projects in current CIP, and projects to put in year 5 before next bond authorization)
- Develop **community support, and data** to support actions and investments (Partnership with ASU)

Figure 1.8 Global carbon dioxide (CO₂) emissions reductions in the WEO 2017 New Policies and Sustainable Development Scenarios



What Areas Does our Climate Plan Address?

● Emissions reduction

• Energy

- Business engagement
- Renewables
- Energy efficiency financing

• Transportation

- 20 minute city (Demand response, transit and roadway configuration)
- Electric vehicles
- Autonomous vehicles

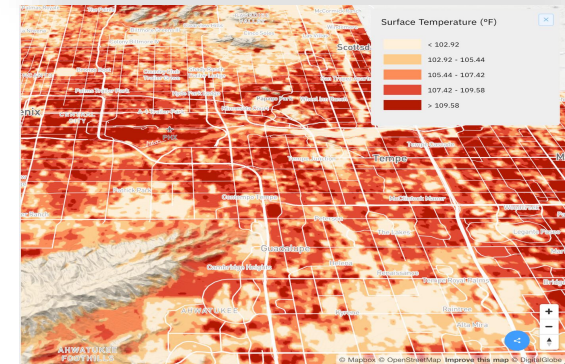
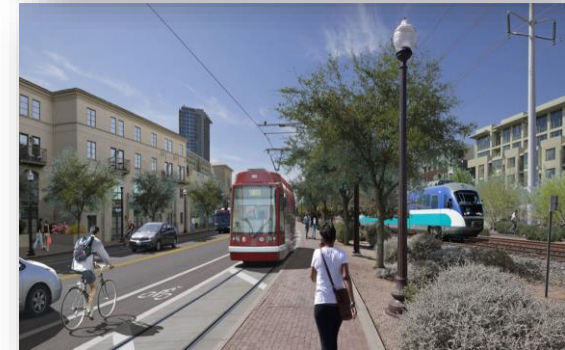
● Resilience

• Extreme heat

- Emergency response
- Building and landscape code
- Urban forestry

• Drought

• Air Quality





Why heat? Why now?

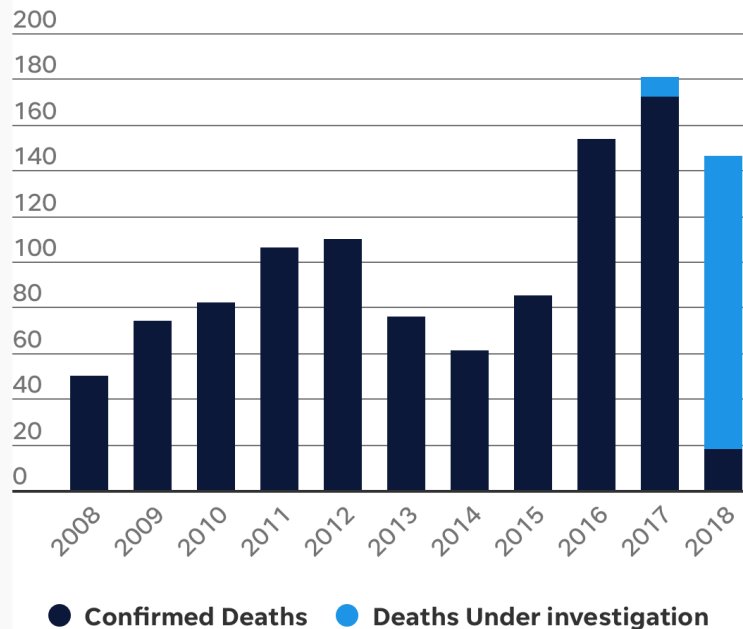
Men leave Phoenix shelter for last time this morning

Brenna Goth, The Republic | azcentral.com Published 8:10 a.m. MT April 1, 2015 | Updated 1:10 p.m. MT April 2, 2015



Image source:
<https://www.azcentral.com/story/news/local/phoenix/2015/04/01/phoenix-homeless-shelter-closes-men-leave/70768806/>

Heat-associated deaths in Maricopa County, 2008-2018



Source: Maricopa County Department of Public Health

Extreme Heat

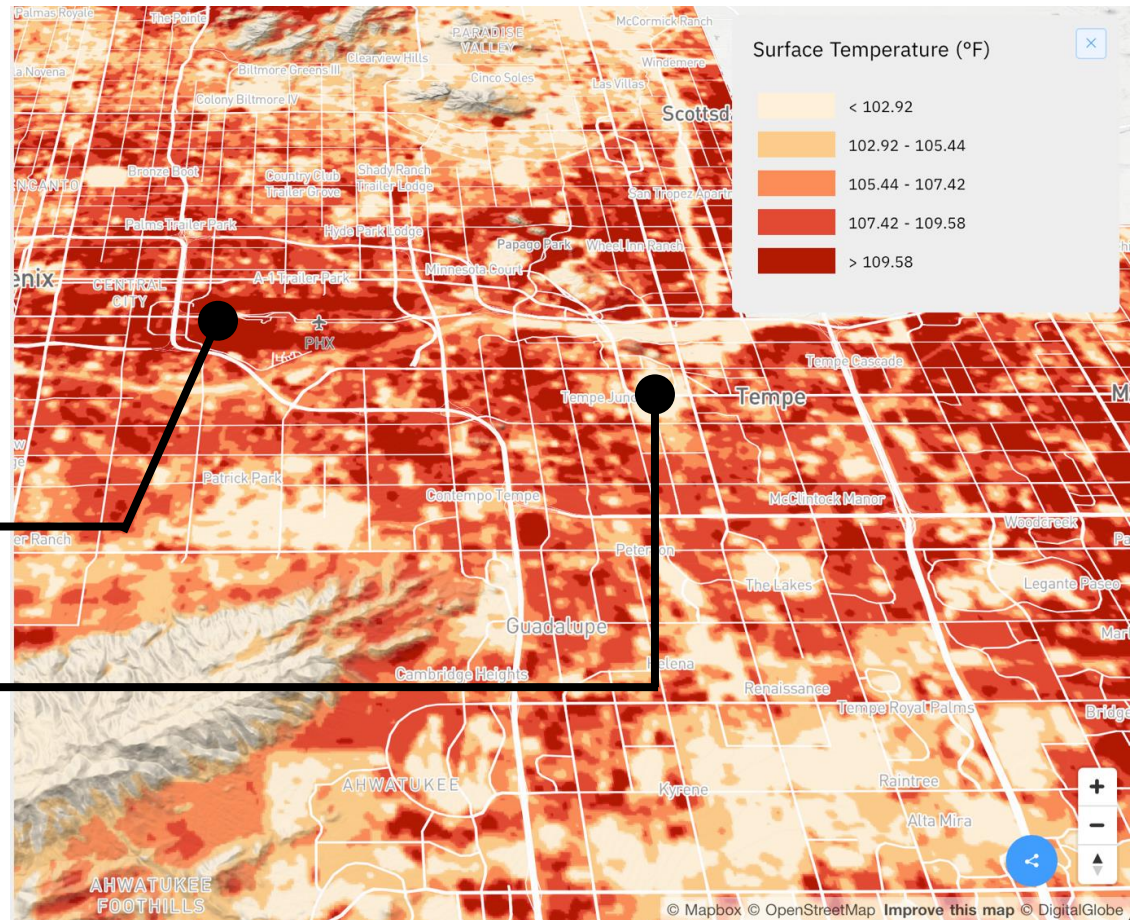


Urban Heat Islands

August 16, 2016

Sky Harbor Airport

ASU Campus



From: Urban Systems Lab

<http://urex.urbansystemslab.com>

Source: USGS 8/16/2016 Landsat 8 image

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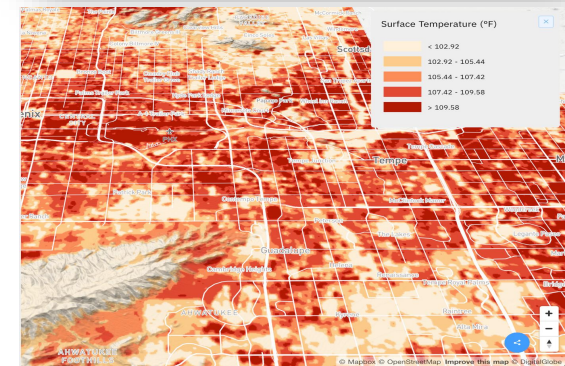
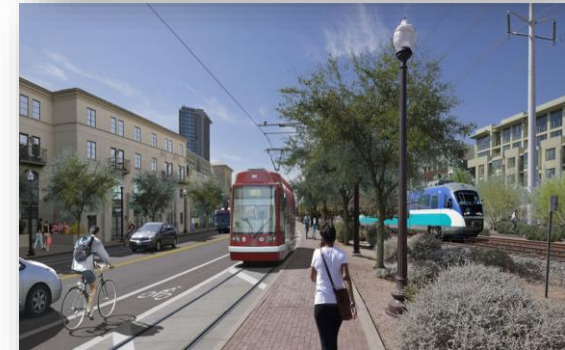
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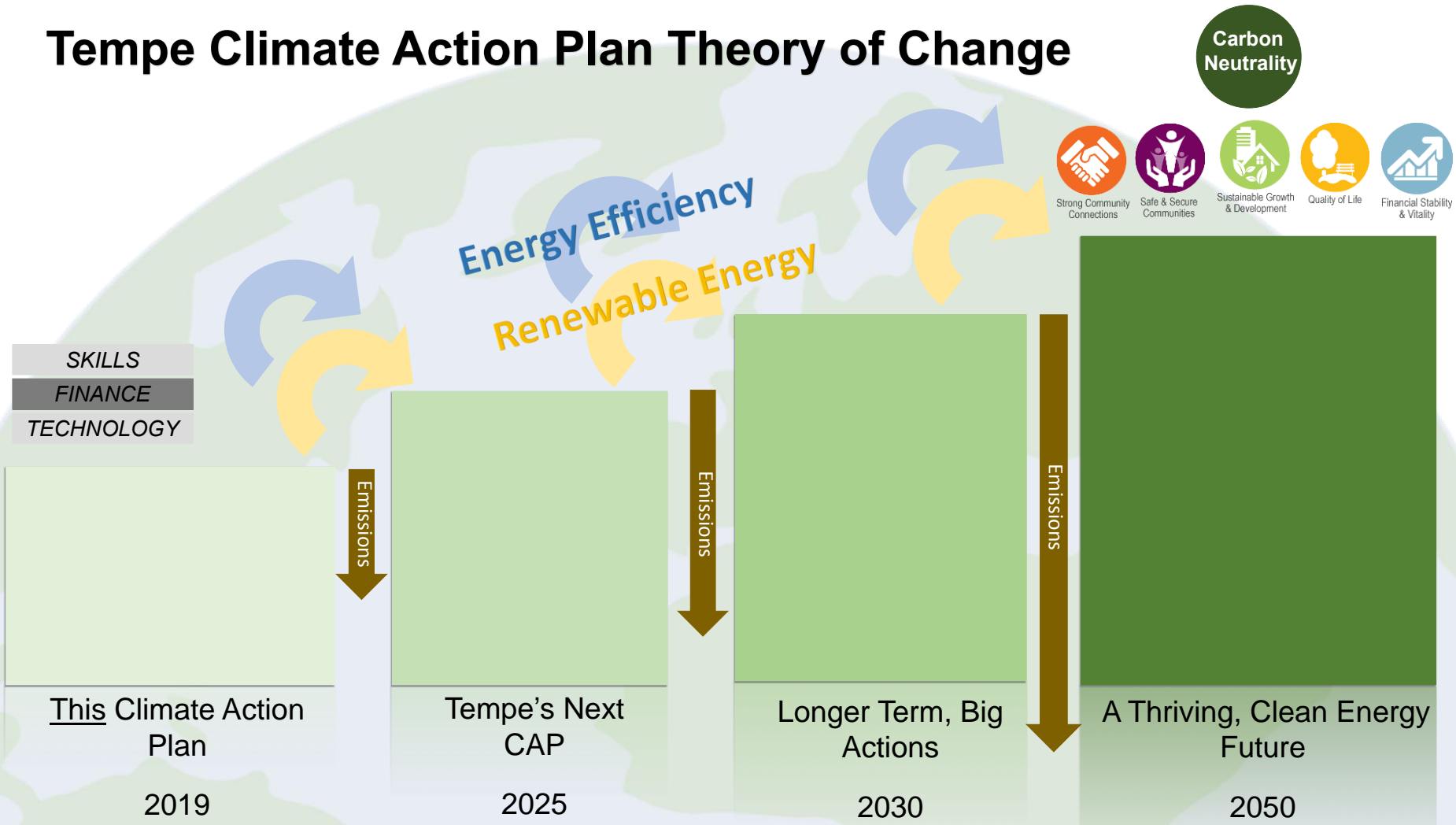
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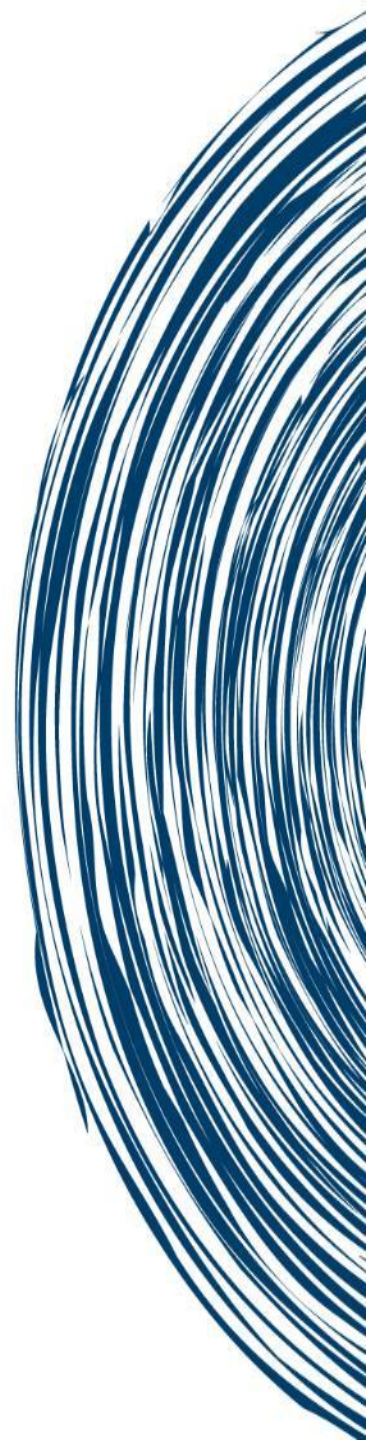


Tempe Climate Action Plan Theory of Change



Climate Action Plan Engagement

Spring 2018:	Interviews with city staff
May 2018:	Update to Sustainability Commission
October 11:	Expert forum on energy actions
October 30:	Public forum on transportation actions
November 13:	Joint meeting of sustainability and transportation commissions on transportation actions Expert forum on transportation actions
February 26:	Public forum on energy and heat
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Summer:	Review of Climate Action Plan
Fall:	Potential Adoption



Stakeholder Forum on Community Energy

CRAFT 2050: Climate Resilience and Action For Tempe
October 11, 2018

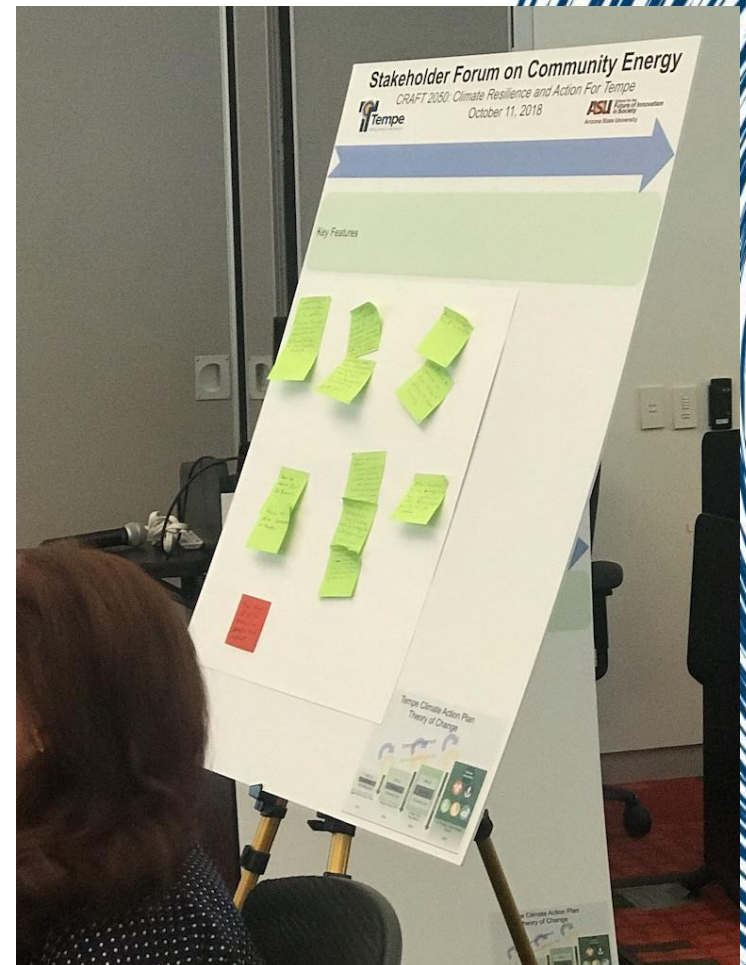
Tempe
Making waves in the desert

ASU School for the Future of Innovation in Society
Arizona State University

Centralized Sustainability Platform (CSP)

Key Features

- Rebates, incentive programs - all on one site - Co-hosted by Chamber & City of Tempe
- Tool to help biz understand what they qualify for & ROI
- Incentives from Chamber



Proposed Actions for Climate Action Plan

See and provide comment on actions came from previous expert engagements on the climate action plan:

1 Hire an Emergency Manager that works on the city's resilience to extreme heat.

2 Further invest in Urban Forestry Master Plan to provide more shade in parks and along streets.

3 Adopt Green Building Code with support for increasing shade and use of cool materials.

1 Create a revolving fund to support energy upgrades to businesses and schools in Tempe.

2 Pilot solar electric vehicle charging to store electricity during peak sunlight for use in homes.

3 Create a centralized sustainability platform to help businesses implement energy upgrades.

4 Create resilient energy hubs with renewable energy and energy storage.



Tempe.



Combatting Extreme Heat

- Use dots to provide input on what actions you would support Tempe in taking to combat extreme heat.

Combatting Extreme Heat

CRAFT 2050: Tempe's First Climate Action Plan

From the ideas and actions below, please place a dot on those you support or agree with:

A strategy to double the number of trees in Tempe over time is a good idea.

If the city gave me a tree (for free) to help shade my house, I would like one and I would be willing to give it water.

I think we should have a lot more fruit trees around the city.

I would consider volunteering for occasional tree planting projects in my local community.

I would consider donating to a citywide tree campaign in my city.




If there was a shaded pathway from my home to nearby shops, I would walk to those shops more than I do now.

In hot weather, I sometimes cross the street in order to walk in the shade.

I need more shade around the home/building I live in.

I support requiring developers to provide shade and use cool materials in new buildings.

Further Comments or Ideas





Improving Air Quality

- Two posters
- Use dots to provide input on how you are affected by air quality issues in Tempe and how you would like to see the city prioritize actions to address air quality.

Improving Air Quality
CRAFT 2050: Tempe's First Climate Action Plan

Are you concerned with Tempe's air quality?
Please place a dot on the choice you agree with:

Yes No

What should the City of Tempe do to improve local air quality?
Please place a dot on the TWO choices you most support or agree with:

Work with local utilities to increase the amount of clean, renewable energy available to Tempe residents.

Create programs that help Tempe residents purchase electric vehicles.

Create regulations that limit the use of diesel leaf blowers and lawn mowers.

Invest in low-emissions public transportation like electric buses, light rail and streetcar.

Make it safer and more convenient for walking and biking in Tempe.

Further Comments or Ideas

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Research and expert and public engagement for the Tempe Climate Action Plan was supported by funds from the Global Consortium for Sustainability Outcomes.

GCSO

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GCSO

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Clean Energy Upgrades

- Provide input on what actions you would support the city in pursuing to help upgrade homes and businesses with more energy efficient technologies.
- Provide input on the city's long-term goals

Clean Energy Upgrades

CRAFT 2050: Tempe's First Climate Action Plan

Energy Efficiency and Renewables

From the ideas and actions below please place a dot on the ones you agree with or support the city in pursuing:

Offer free energy audits to homeowners to identify savings opportunities

Work with local utilities to offer special incentives to reduce energy use in homes

Offer low interest financing options to homeowners wanting to do energy efficiency upgrades

Offer upgrade assistance to low-income households with single-pane windows

Tempe's Long-Term Goals

Tempe has the goal of having a carbon neutral city government by 2035.

Given this current goal, please place a dot on the following statements you agree with or support:

I would like to see Tempe adopt a goal of 100% clean energy for all homes and businesses by 2060 (the same goal as the City of Phoenix).

I would like to see Tempe reduce its emissions by 80% of 2015 levels by 2050 (the same goal as the City of Flagstaff).

I would like to see Tempe adopt a goal of 100% clean energy for all homes and businesses by 2035.

Further Comments or Ideas



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